

WHAT IS CLAIMED IS:

1. A method of reconstruction of a dynamic three-dimensional image of an object covered by a contrast medium comprising the steps of:

(a) reconstruction of a static three-dimensional image of the object from a first set of digitized two-dimensional projected images of the object respectively obtained for different imaging positions around the object;

(b) acquisition of at least a second set of n static two-dimensional projected images respectively obtained for a same first imaging position and at n successive propagation times of the contrast medium; and

(c) reconstruction of the dynamic three-dimensional image of the object from each static two-dimensional image of the second set and the reconstructed static three-dimensional image.

2. The method according to claim 1 comprising the step of:

calibration to elaborate a virtual volume surrounding the object and broken down into voxels, in that the reconstructed static three-dimensional image is then made up of static estimates, respectively associated with the voxels of the virtual volume, each static estimate being representative for the corresponding voxel of the density of contrast medium injected in the object, in that the dynamic three-dimensional image is composed of n elementary three-dimensional images corresponding to n propagation times of the contrast medium, and in that a current elementary three-dimensional image corresponding to a current propagation time is reconstructed;

(1) from the static estimates of density of contrast medium injected in the object;

(2) for each voxel from the intensity of the pixel of the static two-dimensional image corresponding to the current propagation time, on which the voxel is projected; and

(3) for each of those pixels, from the integral of the estimates of density of the voxels of the virtual volume situated along the line of sight associated with that pixel.

3. The method according to claim 1 comprising the step of:

acquisition of a third set of static two-dimensional projected images respectively obtained for a same second imaging position, separate from the first position, and at the same successive propagation times of the contrast medium, and in that the dynamic three-dimensional image of the object is reconstructed from the static three-dimensional image, from each image of the second set and from each image of the third set.

4. The method according to claim 2 comprising the step of:

acquisition of a third set of static two-dimensional projected images respectively obtained for a same second imaging position, separate from the first position, and at the same successive propagation times of the contrast medium, and in that the dynamic three-dimensional image of the object is reconstructed from the static three-dimensional image, from each image of the second set and from each image of the third set.

5. A device for reconstruction of a dynamic three-dimensional image of an object covered by a contrast medium, comprising

(1) first means for reconstructing a static three-dimensional image of the object from a first set of digitized two-dimensional projected images of the object, respectively obtained for different imaging positions around the object,

(2) means for acquiring at least a second set of n static two-dimensional projected images from a same first imaging position and corresponding to n successive propagation times of the contrast medium; and

(3) second means for reconstructing the dynamic three-dimensional image of the object from each static two-dimensional image of the second set and from the reconstructed static three-dimensional image.

6. The device according to claim 5 comprising:

means for calibration to elaborate a virtual volume surrounding the object and broken down into voxels, in that the reconstructed static three-dimensional image is then made up of static estimates, respectively associated with the voxels of the virtual volume, each static estimate being representative for the corresponding voxel of the density of contrast medium injected in the object, in that the dynamic three-dimensional image is composed of n elementary three-dimensional images corresponding to n propagation times of the contrast medium, and in that a current elementary three-dimensional image corresponding to a current propagation time is reconstructed;

(1) from the static estimates of density of contrast medium injected in the object;

(2) for each voxel from the intensity of the pixel of the static two-dimensional image corresponding to the current propagation time, on which the voxel is projected; and

(3) for each of those pixels, from the integral of the estimates of density of the voxels of the virtual volume situated along the line of sight associated with that pixel.

7. The device for use of the method according to claim 1.

8. The device for use of the method according to claim 2.

9. The device for use of the method according to claim 3.

10. Computer program comprising program code means employing the method, as defined in claim 1, when the program is executed in a processor.

11. Computer program comprising program code means employing the method, as defined in claim 2, when the program is executed in a processor.

12. Computer program comprising program code means employing the method, as defined in claim 3, when the program is executed in a processor.

13. Support, capable of being read by a processor, and containing program code means that can apply the method, as defined in claim 1, when the program is executed in the processor.

14. Support, capable of being read by a processor, and containing program code means that can apply the method, as defined in claim 2, when the program is executed in the processor.

15. Support, capable of being read by a processor, and containing program code means that can apply the method, as defined in claim 3, when the program is executed in the processor.